Preserving Our Living Legacy

PARKS PLAN 90

June 1990

Landscapes for BC Parks

BC Parks
Planning and Conservation Services

90-07003/

Canadian Cataloguing in Publication Data

Main entry under title:

Preserving our living legacy : Parks Plan 90 : Landscapes for BC Parks

Includes bibliographical references

ISBN 0-7726-1137-8

1. Parks - Government policy - British Columbia. 2. Parks - British Columbia - Planning. I. British Columbia. Ministry of Parks. Planning and Conservation Services. II. Title: Parks Plan 90. III. Title: Landscapes for BC Parks.

SB484.C3P73 1990 333.78'3'09711 C90-092155-2

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Foreword

BC Parks began inviting all British Columbians to participate in shaping a future for their provincial parks system in 1988, when it released a draft policy paper which became *Striking The Balance* — the first formal statement of public policy ever produced by BC Parks. Its purpose was to further public understanding by clearly stating BC Parks goals and management principles.

That commitment to a public-participation process continues with Landscapes For BC Parks, a draft report which provides a rational method for achieving the conservation goal of protecting examples of the most important representative landscapes of B.C. Like the draft paper which became *Striking The Balance*, this report is a preliminary document intended to inform the public and encourage discussion and comment. After considering and responding to public input, appropriate changes will be made before this report is formally incorporated into an overall plan to guide the future of the BC Parks system.

The purpose of this report is to:

- explain the concept of landscapes;
- outline the process for applying the concept to the park system;
- undertake a preliminary review of the park system to determine the degree to which the present system meets the idealized objectives of the landscape concept; and
- briefly describe each landscape.

The Ministry of Parks gratefully acknowledges the extensive work of Mr. Ken Youds, of J.K. Youds: Planning Consultant, Victoria, B. C., who prepared the original second draft of the landscape document in July 1989. That edition has since been slightly revised to bring the landscape boundaries more in line with the Ecoregion conceptual framework of the Ministry of Environment.

Introduction

Purpose

This document explains the theory and the method by which the major parks of the provincial parks system contain and represent British Columbia's diverse natural environment. This explanation has three main parts: an introduction to the concepts; a description of the geographical units employed; and a discussion and overview of the application to the provincial parks system.

It is a fundamental principle that conservation of sustainable samples of the natural environment is an important role for the parks system. Specifically:

(a) it is ecologically important to preserve a cross-section of environmental diversity. The long term viability of these preserved ecosystems is greater if the protected areas are large; and

(b) it is also a social value that a spectrum of natural areas be provided for wilderness and nature appreciation, outdoor recreation and environmental education.

Therefore, since large parks are desired by society, there should be a rational method of selecting and adding such areas to the park system up to a finite, achievable end.

The central concept in this document is "Landscapes", which was introduced to the British Columbia Park System in the late 1970s. During the past ten years, the concept has gained widespread acceptance by planners, decision makers, and the general public. Based upon the experience gained by the Ministry of Parks over the past few years, as well as in consideration of recent advances in the delineation of physiographic and ecological units in British Columbia, this document is intended to clarify definitions and to refine the landscape divisions of the province.

The descriptions of the landscapes are brief and preliminary, as is the assessment of current levels of representation . A more detailed review of these two areas is underway. A complete description of each landscape will be developed and outlined in an appendix document available in the fall of 1990. The more complete assessment of representation will be available at the same time.

Representing the Natural Environment

Goal Statement

The provincial parks system of British Columbia should contain representation of the diversity of natural environments found across the province in order to conserve sustainable ecological values and to provide for wilderness and nature appreciation, public outdoor recreation, and environmental education.

Discussion

To accomplish this goal, the Parks Ministry blends a humanistic understanding of the regional geography of the province with various scientific classifications of specific environmental themes. The result is a series of regions that are geographically based, recognizable, general natural environments.

These divisions of the natural geography of British Columbia are reasonably distinctive occurrences of patterns and associations of landforms and terrain, wildlife and vegetation, climate, and water.

By containing within the provincial parks system representative samples of these diverse regional natural environments, the Parks Ministry will conserve this natural diversity as well as provide opportunities for public enjoyment of and enlightenment about their environment.

Concept Definitions

Landscapes

The central concept in implementing the goal is that the natural environment of the province can be described, understood, and conserved on a regional basis. These regions of the natural environment are referred to as "Landscapes". The third section of this report defines and describes 59 such regional landscapes across the province.

Regional landscapes are land and marine geographic segments of the province that are each reasonably distinct in terms of the occurrence and patterns of the major constituents of the natural environment. A regional landscape can be readily described by identifying its general location (northern or southern, coastal or interior), terrain appearance and typical landforms, typical vegetation patterns, typical wildlife occurrences, presence of freshwater and saltwater bodies, and the general climate.

These distinguishing traits are referred to as environmental characteristics and each regional landscape is described in terms these characteristics. Like the elements of a personality, it is the combined effect of these landscape traits which distinguish the landscapes.

The patterns of typical characteristics tend to be interdependent, and people tend to appreciate them a part of a whole regional landscape. Any two landscapes may be distinguished by observable differences in one or more of these categories of characteristics. In devising this system, consideration has been given to ensuring that most park visitors will be capable of perceiving and appreciating the differences between adjacent landscapes.

While each landscape tends to be a relatively homogeneous setting for wilderness appreciation, recreation and environmental education, compared to adjacent areas, it should be understood that in most instances there will be sub-regional variations and that, ideally, a representative park will include these variations.

Landscape Representation

The objective is to contain a reasonable representation of each landscape within the park system. Representation means that a balanced sample of the spectrum and patterns of environmental characteristics is contained within, as the preferred strategy, a single, contiguous park area.

Ideally, to achieve satisfactory representation of a landscape, a park area must encompass a reasonable sample of topographic variety, the full elevational range, and a balanced selection of solar aspects, drainage, and other large scale variations that tend to govern the occurrence of floral and faunal patterns. This will best serve the social and ecological values of the representation goal. The second section of this report explains the range of criteria and the process for assessing representation and for achieving the goal.

As a goal, satisfactory representation of all the landscapes of the province is an ideal. Progress toward this ideal requires that priorities and strategies be identified among the landscapes because they differ strongly in their inherent appeal to the general public, in their ecological significance, and in their availability for the designation of major parks. The second section of this report addresses these matters in distinguishing levels of and strategies for achieving representation.

Implementation

Levels of Landscape Representation

As suggested earlier, pursuit of sufficient landscape representation necessitates evaluation of the levels of representation currently achieved or potentially achievable. Three broad levels are recognized for the British Columbia parks system, and these are defined as follows:

(a) **Satisfactory**:

This is the ideal; it is the complete or near to complete representation according to the requirements of the description of each regional landscape. At a minimal level, most or all of the environmental characteristics must be included within one or more provincial park or comparable designation to the degree that there is a reasonable assurance that the natural elements and systems will be sustainable on a long term basis within the defined boundaries;

(b) **Partial**:

A landscape is partially represented when some but not most of the environmental characteristics of that landscape are protected within one or more provincial parks or comparable designations to the degree that the long term sustainability of the natural systems is reasonably assured. Partial representation may be an interim step until additional landscape characteristics can be embraced within the parks system;

(c) **Zero:**

A condition of zero representation exists when few or none of the typical environmental characteristics of a landscape are contained within the provincial parks system or a comparable designation on a scale that would assure long term sustainability.

While the satisfactory level of representation is the ideal, based upon the system goal, it is clear that achievement of this level for every landscape may not be attainable by following a single strategy or standard of representation. Some landscapes are extensively urbanized, settled, cultivated, or committed to industrial or commercial resource uses. In such situations, the acquisition of sufficient land areas to satisfactorily represent the landscapes in the parks system may not be achievable. Nevertheless it will remain important to document the level of success achieved in each such "difficult" landscape, and to seek to add to this success as circumstances permit.

Strategies for Representation

To achieve the ideal of satisfactory representation of each regional landscape, there are various strategies available.

Single, Contiguous Class 'A' Provincial Park

The normal strategy of representing each landscape is to protect a satisfactory sample within a single, large provincial park of Class 'A' status.

Departures from this conventional strategy may be justified on the basis of the ecological or recreational significance of a given landscape, of the representation role provided by other protective designations, or of the degree of competing land and resource interests. These alternative strategies are as follows:

(a) **Replication:**

The landscapes vary tremendously in their ecological characteristics. Some landscapes encompass ecological values (vegetative patterns, animal habitats, etc.) that might be better protected by setting aside more than a single area that satisfies the representation goal. This is most true in areas under the extensive land or resources development pressures. In such instances, replication of representative areas would help ensure the sustainability of particularly sensitive characteristics.

Landscapes differ strongly in their inherent appeal to the general public for recreational and educational visitation. This is an important consideration in establishing a system of parks, because parks — particularly provincial parks — are natural environments set aside for public appreciation and enjoyment. Consideration of this factor modifies the requirements of satisfactory representation for each landscape. For those landscapes with little public appeal, a base level of satisfactory representation will probably suffice. Conversely, those landscapes with high appeal will require replicated representation in order to accommodate the anticipated level of public interest in visiting such areas. For those, in association with distinct access routes and

destination areas, it is important that there is sufficient replication to satisfy the public's interest as well as to help protect ecological values from overuse.

(b) **Comparable Designations:**

Other land conservation designations may contain representative samples of landscapes. To the extent that they do, the need or priority for action in the establishment of a provincial park to represent the same landscape may be reduced considerably. Such alternative designations must provide for or promise comparable levels of environmental protection and public outdoor recreation.

In British Columbia, the provincial parks system under the authority of the Park Act is the most important and the leading vehicle for landscape representation, in relation to public appreciation and enjoyment. Under this statute only Class 'A' parks are sufficiently protective to fully satisfy the goal of representing landscapes. Other designations, such as recreation areas and designatins under the Forest Act, offer less protection, however, these may contribute to landscape representation and should be considered as candidates or nominees for landscape representation. They reduce the need or priority to seek further representative areas for the parks system.

Outside the Park Act, the only designations providing for both public recreation and environmental conservation are:

(1) National Parks (National Parks Act):

These provide for ecological protection and public outdoor recreation to a level equivalent to Class 'A' provincial parks. There are presently five such areas in British Columbia;

(2) National Park Reserve (National Parks Act):

Such a reserve serves as a suitable candidate or nominee for landscape representation, until such time as it is designated as a full national park. One area presently exists in British Columbia;

(3) Regional Parks (Regional Parks Act):

This statute provides for comparable protection and levels of recreation. Some regional parks may be of sufficient size that they perform a landscape representation role

(c) **System of Partially Representative Areas**

Some entire landscapes and the lower elevations of many other landscapes are dominated by private lands or by commercial interests in land and resources. In many landscapes, economic land values tend to be highest and most concentrated in the valley bottoms; this is particularly true in the southern half of the province. In these instances, achievement of satisfactory landscape representation by the creation of a single, all-encompassing park may not be attainable in the short or the long term.

Rather than suspend any planned effort to succeed at landscape representation in such areas, the compromise solution is to deliberately create a system of smaller parks in the landscape. These parks may range in size considerably. Each must be partially representative of the complete spectrum of landscape

characteristics, and there should be overlap and replication between the sites in terms of the characteristics represented. With this strategy it is also essential that the interrelationship of the individual parks be identified to the public.

(d) **Landscape Vista:**

For some landscapes, particularly lowlands that have been extensively urbanized, cultivated or modified by industrial/resources development, the identification of significant natural areas to even partially represent the characteristics of the natural environment is difficult. In such areas of the province, it may only be possible to identify and designate relatively small parcels as parks, and these are likely to serve more as sites of intensive recreation than as even partially representative natural areas.

In such landscapes, although not a substitute for landscape representation, it will be appropriate to provide parks that offer vistas. From such sites, it is possible to interpret and explain the general character of the landscapes, both in their natural state and in their contemporary man-modified condition.

Landscape Representation Criteria

In order to proceed toward accomplishing the program goal, it is necessary to assess the levels of representation provided by existing parks and that might be provided by candidate areas for park designation.

The landscape descriptions presented in the third section of this report can be used as general guides for the assessment of representation. With these descriptions and with the following basic criteria, existing parks and candidate areas can be evaluated:

(a) Topographic pattern(s):

Inclusion of the typical variety of landforms, configurations (including shorelines), slopes, and general terrain;

(b) Elevational range:

Inclusion of the average, full range of elevations;

(c) Common or dominant physical features:

Inclusion of a reasonable sampling of the most common and pervasive physical features identified with the landscape;

(d) Rivers and streams:

Inclusion of the typical patterns or occurrences of flowing water in a natural (undisturbed, uncontaminated) condition and, where possible, complete watersheds;

(e) Water bodies:

Inclusion of typical patterns or occurrences of tidal waters, lakes, and permanent ice in a natural condition;

(f) Biogeoclimatic zones and subzones:

Inclusion of viable samples of the typical biogeoclimatic zones, including the associated subzones and the spectrum of commonly associated vegetative communities, in a size and configuration that will ensure ecological sustainability.

(g) Faunal habitats:

Inclusion of the full diversity of habitats for each the major mammal species and the typical resident and migratory bird species that are common to the various elevations of the landscape. These should be of sufficient size and configuration that their viability is not threatened by adjacent land uses or foreseeable events;

(h) Animal populations:

Inclusion of viable populations of the major mammals (land and marine) and typical resident and seasonal birds common to the landscape;

(i) Aquatic habitat and aquatic life:

Inclusion of typical aquatic and intertidal habitat and viable populations of native fish species, other aquatic life, and intertidal life;

(j) Overall natural conditions:

There should be a generally high degree of freedom from disturbance from humans and human endeavours. As near as possible, representative areas should reflect the condition of the natural environment that would have prevailed prior to European colonization;

(k) Overall integrity of boundaries:

The proposed, attainable boundaries of an area should sufficient to encompass and protect ecological values, including wildlife and wildlife habitat.

For each of these criteria, an area can be ranked as offering zero, low, moderate, or high satisfaction. Consideration of the cumulative rankings will permit a conclusion regarding overall level of representation achieved by an area, as well as identify landscape characteristics that require further attention. It is recognized that evaluation of the satisfaction of these criteria will often be based on subjective or incomplete information.

Assigning Priorities

The goal of the parks system representing the diverse natural environments of British Columbia is an ideal. Toward attaining the ideal, it is necessary to pursue representation of all the regional landscapes to the extent that is practical. As such, the goal serves as a benchmark against which progress can be measured

There is a wide array of landscapes that should be represented in the parks system. As these must be dealt with in an orderly fashion, it is appropriate to consider their relative priority. The fundamental considerations must be urgency (i.e. are the environmental opportunities for representation swiftly diminishing?) and importance (for outdoor recreation, ecological values and environmental education).

The following general factors affect the relative priority for satisfying the representation of each landscape:

- the degree to which a landscape is already represented, either in the provincial parks system or in a comparable conservation system;
- the biological/ecological importance of protecting characteristics of a given landscape;
- the relative attractiveness to the public of the landscapes;
- the relative abundance and availability of lands within each landscape to satisfy representation (i.e. urgency); and
- the feasibility/cost of acquiring sufficient lands to represent each landscape.

These general factors lead to a simple evaluation process for determining the priority and strategy for achieving satisfactory representation of each regional landscape. This process is outlined as follows:

Step 1: assess the present level of representation; identify shortcomings;

Step 2: assess the biological/ecological significance of the need for further landscape representation: consider rarity, fragility, and potential imperilment;

Step 3: assess the level of public demand for outdoor recreation/education opportunities in the landscape;

Step 4: consider the availability of undesignated wildlands and natural areas as sources for candidate representative areas;

Step 5: consider the land use, land value (economic), and land ownership patterns;

Step 6: consider the relationship of each landscape to adjacent landscapes, in terms of similar characteristics that may already be represented or may be more easily represented in an associated landscape; and,

Step 7: in the context of the other regional landscapes and on the basis of the foregoing assessments and considerations, identify the appropriate strategy and priority for seeking satisfactory representation of the landscape.

Overview of Current Levels of Representation

The purpose of this section of the report is to provide an overview of the present level of representation of the regional landscapes and to suggest plausible approaches to completing representation for each landscape.

This application of the principles introduced in the preceding section of this report is preliminary only. It is not based upon a detailed assessment of each park or each landscape. The aim is to provide a quick "snapshot" of the present situation, together with some general strategy advice.

From this cursory review, it appears that of the 59 landscapes identified, 28 are currently represented to a near-adequate or satisfactory degree, while 13 are partially represented and 18 are not represented at all.

Table 1

Landscapes	Supply of Areas	Level of Representation	Weaknesses & Considerations	Completion Strategies
1. Gulf Islands	small parks	near adequate	- bio-diversity - eco-sustainability - topo-diversity - contiguity/size - shorelines - estuary - marine area - recreation demand	Enlarge parks. Expand system of parks. Landscape vistas.
2. Georgia Lowland	small parks; med. parks	near adequate	- topo-diversity - eco-sustainability - contiguity/size - rivers/estuary - marine area - faunal habitat - recreation demand	Enlarge parks. Expand system of parks. Landscape vistas. Replication.
3. West Van. Is. Mountains	small parks; medium parks; large parks & recreation areas	near adequate	- marine areas/fjords - estuaries - low elevation forest - complete watersheds - faunal habitat - karst - wilderness demand	Expand system of parks.. Improve boundaries.
4. E. Van. Is. Mountains	large park small park	satisfactory	- marine areas - faunal habitat - rivers, spawning habitat - low elevation lakes - karst	Improve boundaries.
5. W. Coast Plain	small parks; large park	near adequate	- marine areas - mature forests - faunal habitat - eco-sustainability	Improve Boundaries. Replication. Expand system of parks.
6. Nahwitti Lowland	large park	satisfactory	- viewshed - watersheds	Improve boundaries. Expand system of parks.

Landscapes	Supply of Areas	Level of Representation	Weaknesses & Considerations	Completion Strategies
7. Fraser Flood Plain	small parks	partial	- natural areas - river - bio-diversity - estuary - shorelines - contiguity	Expand system of parks. Replication Landscape vistas.
8. Skagit-Lower Mainland Mtns.	large parks & rec. areas; small parks	satisfactory		
9. Southern Fiordland	small parks	zero	- fiords - marine area - shorelines - topo-diversity - bio-diversity - contiguity	Major park. Expand system of parks.
10. Pacific Ranges	large parks; small parks	satisfactory	- low elevations - forests - faunal habitats	Improve boundaries.
11. Midcoast Fiordland	small parks	zero	- all aspects	Major park Expand system of parks
12. North Coast Fiordland	large recreation area	satisfactory	-islands - faunal habitats - estuary	Upgrade status. Expand system of parks Replication
13. North Coast Lowland	large recreation area	satisfactory	- faunal habitats	Upgrade status Expand system of parks
14. Queen Charlotte Lowland	large park	satisfactory	- watersheds - estuary	Upgrade status.
15. Queen Charlotte Mountains	large park reserve	satisfactory		Upgrade status. (federal govt.)
16. Kitimat Ranges	large recreation area	satisfactory	- geologic features -faunal habitats -low elevation forests	Expand system of parks.
17. Cascade Ranges	large parks; med. rec. area; small parks	satisfactory		

Landscapes	Supply of Areas	Level of Representation	Weaknesses & Considerations	Completion Strategies
18. Chilcotin Mountains	portion large park	partial	- all aspects	Major parks. Replication.
19. Pavilion Ranges	small park	zero	- all aspects	Major park.
20. Thompson Plateau	small parks & recreation area	partial	- eco-sustainability - contiguity - topo-diversity - bio-diversity - faunal habitat - recreation demand	Expand system of parks.
21. Thompson Basin	small parks	partial	- all aspects	Landscape vistas. Expand system of parks.
22. Okanagan Basin	small parks; medium parks	satisfactory	- contiguity - recretion demand	Expand system of parks. Landscape vista.
23. Okanagan Highland	med.rec.area	zero	- all aspects - topo-diversity - bio-diversity - faunal habitat - eco-sustainability - water bodies	Expand system of parks.
24. South Columbia	med.rec.area; small parks	partial	- contiguity - topo-diversity - faunal habitat - low elevation - rivers/waterbodies	Major parks. Expand system of parks.
25. Central Columbia Mountains	large parks; large wild. conservancy; small parks	satisfactory		Improve boundaries.
26. Purcell Mountains	large wild. conservancy medium park; small parks	partial	- topo-diversity - low elevations - bio-diversity - faunal habitat	Improve boundaries. Upgrade status. Expand system of parks.
27. North Columbia Mountains small parks	large parks; large rec. area;	satisfactory		

Landscapes	Supply of Areas	Level of Representation	Weaknesses & Considerations	Completion Strategies
28. East Kootenay Trench	small parks; med. park	partial	- faunal habitat - contiguity - eco-sustainability	Improve boundaries. Expand system of parks. Landscape vistas.
29. S. Rocky Mtn. Trench	small parks	partial	- faunal habitat - wetlands - eco-sustainability - topo-diversity - bio-diversity - rec. demand	Expand system of parks. Replication. Landscape vistas.
30. Border Ranges	large recreation area	partial	- faunal habitat - topo-diversity - bio-diversity	Improve boundaries. Upgrade status.
31. S. Continental Ranges	large parks; small parks	satisfactory		
32. N. Continental Ranges	large parks	satisfactory		
33. Quesnel-Shuswap Highlands	large park; small parks	satisfactory		
34. Cariboo Upland	small parks	zero	- all aspects - rec. demand	Major park. Expand system of parks
35. Central Cariboo Basin	small parks & rec. area	partial	- topo-diversity - bio-diversity - eco-sustainability - contiguity	Major park. Expand system of parks. Replication.
36. Chilcotin Plateau	periphery of large park	near adequate	- low elevation - faunal habitat	Expand system of parks Improve boundaries.
37. Fraser Basin	small parks; large park	satisfactory		
38. Nechako Plateau	small parks; portion of large park	satisfactory		
39. Babine-Stuart Plateau	small parks	zero	- all aspects	

Landscapes	Supply of Areas	Level of Representation	Weaknesses & Considerations	Completion Strategies
40. Bulkley-Tahtsa Ranges	portion of large park	satisfactory		
41. Hazelton Ranges	small parks	zero	- all aspects	Major park.
42. Nass Basin	nil	zero	- all aspects - loc rec. demand	Expand system of parks. Landscape vista. Other designation.
43. Sub-boreal Skeena Mtns.	medium recreation area	partial	- low elevation - faunal habitats - watershed	Major park.
44. Spatsizi Upland	large parks	satisfactory		
45. S. Omineca Mountains	nil	zero	- all aspects	Major park. Expand system of parks.
46. N. Omineca Mountains	nil	zero	- all aspects	Major park.
47. N. Rocky Mtn. Trench	nil	zero	- all aspects - low rec. demand	Landscape vista.
48. Central Rocky Mtns. & Foothills	major park medium park	satisfactory	- low elevation - faunal habitats - watershed - mod.rec. demand	Major park.
49. N. Rocky Mountains	large park; large rec. area	satisfactory		Upgrade status.
50. Northern Foothills	nil	zero	- all aspects	Major park.
51. Peace Plateau	small parks	zero	- topo-diversity - bio-diversity - faunal habitat	Major park.
52. Fort Nelson Lowland	small parks	zero	- contiguity - topo-diversity - bio-diversity - eco-sustainability	Major park. Expand system of parks.

Landscapes	Supply of Areas	Level of Representation	Weaknesses & Considerations	Completion Strategies
53. Liard Upland	small parks	zero	- all aspects	Major park. Expand system of parks. Other designation.
54. Liard Plain	small park	zero	- all aspects	Major park.
55. Cassiar Mountains	small park;	zero	- all aspects	Major park.
56. Stikine-Yukon Plateaus	portion of large park	partial	- bio-diversity - eco-sustainability	Expand system of parks. Improve boundaries.
57. Tagish-Tahltan Highland	portion of large park	partial	- bio-diversity - topo-diversity - faunal habitat	Expand system of parks. Improve boundaries.
58. Boundary Ranges	portion of large park; large rec. area	partial	- topo-diversity - bio-diversity - faunal habitat	Major park.
59. St. Elias Ranges	nil	zero	- all aspects	Major park.

It is emphasized that the above review is very preliminary. Its function is to provide an approximate overview of the present situation relative to the goal. A more detailed analysis based upon the criteria and process identified in this report will be completed.

Landscapes for the Provincial Parks System

Introduction

The purpose of the following text is to provide a brief description of each of the 59 landscapes that have been delineated for the purposes of parks system planning. These landscapes serve as a geographic and scientific framework for the selection of provincial parks oriented to conservation of the diverse natural environments of British Columbia. Also, this framework is useful as an introductory interpretive guide for those interested in the natural geographic diversity of this province.

These landscapes are identified on the map that accompanies this report. An effort has been made in these proposed revisions to craft landscape boundaries that follow other recognized or recognizable demarcations. The method in selecting these lines has involved:

(1) using both Holland's and Mathews' analyses of physiography to determine an appropriate set of important physiographic distinctions;

(2) using Mathews' work and Demarchi's Ecoregion work to refine boundaries, based upon a judgement of which lines better reflect the perceptions of an average observer; and

(3) using biogeoclimatic patterns, topographic patterns, and consideration of other environmental characteristics to further refine the boundaries.

The following landscape descriptions emphasize the highlights of the landscapes. Concise summaries of general environmental characteristics and classifications, particularly of those landscape traits that make each landscape distinctive and those that should be considered when selecting representative park areas, will be published as a technical appendix.

The following table summarizes the landscape descriptions and serves as a guide to the descriptions of landscapes that follow. In table form, comparison between the landscapes is facilitated. Neither the textual nor the tabular landscape descriptions are intended as authoritative references. Consequently, readers seeking detailed, specific, or precise scientific information about these landscapes should consult reference texts that focus upon such subjects as physiography, geology, climate, biogeoclimatic zones, ecoregions, fauna, etc.

REGIONAL LANDSCAPES	CLIMATE TYPE	MAJOR HYDROLOGICAL THEMES	PHYSIOGRAPHY			BIOGEOCLIMATIC ZONES (Ministry of Forests)	ECOREGIONS (Demarchi)
			General Character	Relief	Physiographic Grouping - Physio. Unit (Mathews)		Ecoregions - Ecosections
1 Gulf Islands	temperate coastal, dry-moderate	sheltered gulf	hilly; marine environment	low-mod.	Coastal Depressions - Georgia Depr.	CDF	Str. of Georgia; East. Vanc. Island - Nanaimo Lowland
2 Georgia Lowlands	temperate coastal, moderate	sheltered gulf	rolling & hilly; marine environ.	low-mod.	Coastal Depressions - Georgia Depr.	CWH	Lower Mainland - Georgia Lowland East. Vanc. Island - Nanaimo Lowland
3 West Vancouver Island Mountains	pacific coast and mountains; temperate coastal montane	fiords, open ocean, numerous short, steep streams, estuaries	rugged mountains; strong Pacific influence	mod.-high	Insular Mountains - Vanc. Is. Ranges	CWH, MH, AT	West. Vanc. Island - Windward & Northern Mtns.
4 East Vancouver Island Mountains	dry south coast; temperate coastal montane	moderate/large valley lakes, sheltered strait	rugged mountains, rain shadow characteristics	mod.-high	Insular Mountains - Vanc. Is. Ranges	CWH, MH, AT	East. Vanc. Island - Leeward Island Mtns.
5 West Coast Plain	temperate coastal, wet	open ocean	flat & hilly; marine environ.	low	Insular Mountains - Estevan Strandflat	CWH	West. Vanc. Island - Windward Is. Mtns.
6 Nahwitti Lowland	temperate coastal, wet	open ocean, fiord	flat & hilly; marine environ.	low	Insular Mountains - Nahwitti Lowland	CWH	Nahwitti Lowland
7 Fraser Flood Plain	temperate coastal, moderate	wetlands, major river	flat & rolling	low	Coastal Depression - Fraser Lowland	CWH	Lower Mainland - Fraser Lowland
8 Skagit - Lower Mainland Mountains	temperate coastal montane	large valley lakes	mountainous	high	Coast Mountains - South. Fiord Rgs.(S) - Cascade Ranges (NW)	AT, MH, CWH	Pacific/Cascade Ranges - South & East. Pacific Rgs.
9 Southern Fiordland	temperate coastal montane	sheltered fiords	mountainous; marine environ.	high	Coast Mountains - South. Fiord Rgs. (mid)	AT, MH, CWH	Pacific/Cascade Ranges - Southern Ranges
10 Pacific Ranges	temperate coastal montane	icefields & glaciers	extremely rugged mountains	extreme	Coast Mountains - Pacific Ranges	AT, MH, CWH	Pacific/Cascade Ranges - North. & East. Ranges
11 Midcoast Fiordland	temperate coastal montane	fiords	mountainous; marine environ.	mod.-high	Coast Mountains - South Fiord Rgs.(N)	AT, MH, CWH	Pacific/Cascade Ranges - Outer Fiordland Coastal Gap - Hecate Lowland

REGIONAL LANDSCAPES	CLIMATE TYPE	MAJOR HYDROLOGICAL THEMES	PHYSIOGRAPHY			BIOGEOCLIMATIC ZONES (Ministry of Forests)	ECOREGIONS (Demarchi)
			General Character	Relief	Physiographic Grouping - Physio. Unit (Mathews)		Ecoregions - Ecosections
12 Northern Fiordland	temperate coastal montane	fiords, sheltered channels	mountainous; marine environ.	mod.-high	Coast Mountains - North. Fiord Ranges	AT, MH, CWH	Coastal Gap - Hecate Lowland
13 Northern Coast Lowlands	temperate coastal, wet	open ocean	flat & hilly; marine environ.	low	Coastal Depression - Milbanke Strandflat	CWH	Coastal Gap - Hecate Lowland
14 Queen Charlotte Lowland	temperate coastal, wet	open ocean, wetlands	flat; marine environ.	low	Coastal Depression - QC Lowland	CWH	Queen Charlotte Lowland
15 Queen Charlotte Mountains	temperate coastal, wet	open ocean	mountains & hills; marine environ.	low - mod.	Insular Mountains - QC Ranges	AT, MH, CWH	Queen Charlotte Ranges - Skidegate Plateau - Windward QC Mtns.
16 Kitimat Ranges	temperate coastal montane	glaciers, major river	mountainous	mod. - high	Coast Mountains - Kitimat Ranges	AT, MH, CWH	Coastal Gap - Kitimat Ranges
17 Cascade Ranges	temp. interior montane, dry		mountainous	mod. - high	Coast Mountains - Cascade Ranges	AT, MH, ESSF, MS, IDF, CWH	Pacific/Cascade Ranges - East. Pacific Rgs. Okanagan Range
18 Chilcotin Mountains	temp. interior montane, dry	glaciers & icefields, large valley lakes	mountainous	mod. - high	Coast Mountains - Pacific Ranges	AT, ESSF, MS, IDF, CWH	Chilcotin Ranges
19 Pavilion Ranges	temp. interior montane, dry	major rivers	hills & mountains	low - mod.	Coast Mountains - Pavilion Ranges	AT, ESSF, MS, BG, PP, IDF	Chilcotin Ranges Thompson-Okanagan Plateaus - Clear Range
20 Thompson Plateau	dry interior	plateau lakes	flat, rolling & hilly	low - mod.	Interior Plateaus - Thompson Plateau	ESSF, MS, BG, PP, IDF	Thompson-Okanagan Plateaus - North, East & South Uplands
21 Thompson Basin	dry interior	major rivers, large valley lake	flat & hilly	low - mod.	Interior Plateaus - Thompson Plateau	BG, PP, IDF	Thompson-Okanagan Plateaus - Thompson Basin
22 Okanagan Basin	dry interior	large valley lakes	flat & hilly	low - mod.	Interior Plateaus - Thompson Plateau	BG, PP, IDF	Thompson-Okanagan Plateaus - Okanagan Basin

REGIONAL LANDSCAPES	CLIMATE TYPE	MAJOR HYDROLOGICAL THEMES	PHYSIOGRAPHY			BIOGEOCLIMATIC ZONES (Ministry of Forests)	ECOREGIONS (Demarchi)
			General Character	Relief	Physiographic Grouping - Physio. Unit (Mathews)		Ecoregions - Ecosections
23 Okanagan Highland	dry interior montane	small lakes	hills & mountains	moderate	Interior Plateaus - Okanagan Highlands	AT, ESSF, MS, PP, EDF, ICH	Thompson-Okanagan Plateaus - Okanagan Highland
24 Southern Columbia Ranges	temp. interior montane, moist	large valley lakes & reservoirs	hills & mountains	low - mod.	Columbia Mountains - Selkirk Mtns. - Purcell Mtns. Interior Plateaus - Okanagan Highlands	AT, ESSF, PP, IDF, ICH	Columbia Mountains & Highlands - South. Columbia Mtns.
25 Central Columbia Mountains	temp. interior montane, moist	large valley lakes, glaciers	mountainous	mod. - high	Columbia Mountains - Monashee Mtns. - Selkirk Mtns. - Purcell Mtns.	AT, ESSF, ICH	Columbia Mountains & Highlands - Central Columbia Mtns. - South, Columbia Mtns.
26 Purcell Mountains	temp. interior montane, dry		mountainous	mod. - high	Columbia Mountains - Purcell Mountains	AT, ESSF, MS, PP, IDF	Columbia Mountains & Highlands - East. Purcell Mtns.
27 North Columbia Mountains	temp. interior montane, moist	glaciers & icefields, major rivers, large reservoir, large valley lakes	extremely rugged mountains	high	Columbia Mountains - Cariboo Mtns. - Monashee Mtns.	AT, ESSF, ICH	Columbia Mountains & Highlands - North. Columbia Mtns.
28 East Kootenay Trench	dry interior	large reservoir, small lakes, wetland	flat & rolling	low	South. Rocky Mtn. Trench	MS, PP, IDF	Southern Rocky Mountain Trench - East Kootenay Trench
29 Southern Rocky Mountain Trench	temp. interior, moist	large reservoir, major river	flat & rolling	low	South. Rocky Mtn. Trench	SS, ESSF, CWH	Southern Rocky Mountain Trench - Upper & Big Bend Trenches
30 Border Ranges	temp. interior montane, dry		hills & mountains	moderate	Rocky Mountains - Border Ranges	AT, ESSF, MS	Southern Rocky Mountains - South. Continental Ranges

REGIONAL LANDSCAPES	CLIMATE TYPE	MAJOR HYDROLOGICAL THEMES	PHYSIOGRAPHY			BIOGEOCLIMATIC ZONES (Ministry of Forests)	ECOREGIONS (Demarchi)
			General Character	Relief	Physiographic Grouping - Physio. Unit (Mathews)		Ecoregions - Ecosections
31 South Continental Ranges	temp. interior montane, dry-moist		mountainous	mod. - high	Rocky Mountains - Continental Ranges	AT, ESSF, MS, IDF, CWH	Southern Rocky Mountains - South. Continental Ranges
32 North Continental Ranges	temp. interior montane, moist	glaciers & icefields	extremely rugged mountains	high	Rocky Mountains - Continental Ranges	AT, SS, ESSF, CWH	Southern Rocky Mountains - N. Continental Ranges
33 Quesnel-Shuswap Highlands	temp. interior montane, moist	large valley lakes	hills & mountains	low - mod.	Interior Plateaus - Quesnel Highland - Shuswap Highland	AT, SS, ESSF, IDF, CWH	Columbia Mountains & Highlands - Quesnel & Shuswap Highlands
34 Cariboo Uplands	sub-boreal interior	plateau lakes, wetlands	rolling plateau	low	Interior Plateaus - Cariboo Plateau	SPS, SS, ESSF, CWH	Fraser Plateau - Cariboo Plateau Fraser Basin - Nechako Lowland
35 Central Cariboo Basin	temp. interior, dry	plateau lakes, major rivers' confluence	flat & rolling	low	Interior Plateaus - Chilcotin Plateau - Cariboo Plateau	SPS, BG, IDF	Fraser Plateau - Chilcotin-Cariboo Basin
36 Chilcotin Plateau	sub-boreal interior, dry	plateau lakes, wetlands	flay & rolling; some mountains	low	Interior Plateaus - Chilcotin Plateau	AT, SPS, SS, ESSF, MS, IDF	Fraser Plateau - Nazko Upland - Nechako Plateau - Chilcotin Plateau
37 Fraser Basin	sub-boreal interior	major river confluence, plateau lakes, wetlands	flat & rolling	low	Interior Plateaus - Nechako Lowland - Nechako Plateau	SS, ESSF	Fraser Basin - Nechako Lowland
38 Nechako Plateau	central interior; sub-boreal	large elongated lakes, small plateau lakes, wetlands	rolling and gently hilly	low - mod.	Interior Plateaus - Nechako Plateau	SPS, SS, ESSF, AT	Fraser Plateau - Bulkley Basin - Nazko Upland - Nechako Plateau
39 Babine - Stuart Plateau	north central interior; sub-boreal	numerous large and moderate sized lakes, gentle gradient river connections	rolling and hilly upland, wide valleys	low - mod.	Interior Plateaus - Nechako Plateau	SPS, ESSF, AT	Fraser Basin - Babine Upland

REGIONAL LANDSCAPES	CLIMATE TYPE	MAJOR HYDROLOGICAL THEMES	PHYSIOGRAPHY			BIOGEOCLIMATIC ZONES (Ministry of Forests)	ECOREGIONS (Demarchi)
			General Character	Relief	Physiographic Grouping - Physio. Unit (Mathews)		Ecoregions - Ecosections
40 Bulkley-Tahtsa Ranges	sub-boreal interior montane	large valley lakes, glaciers	rolling mountains	moderate	Coast Mountains - Hazelton Ranges	AT, SPS, ESSF, CWH	Fraser Plateau - Bulkley Ranges Coastal Gap - Kitimat Ranges
41 Hazelton Ranges	temperate coastal montane	glaciers, major river	rugged mountains	high	Coast Mountains - Hazelton Ranges	AT, ESSF, ICH, CWH	Nass Ranges
42 Nass Basin	temp. interior montane, moist	small lakes, wetlands	rolling & hilly; some mountains	low - mod.	Skeena Mountains - Nass Depression	AT, ESSF, ICH	Nass Basin
43 Skeena Mountains	sub-boreal interior montane	glaciers	mountainous	moderate	Skeena Mountains - Skeena Ranges	AT, SS, ESSF, ICH	Skeena & Omineca Mountains - West. & East. Skeena Mtns.
44 Spatsizi Uplands	boreal montane		rolling & mountainous	moderate	Skeena Mountains - Skeena Ranges Stikine Plateaus - Spatsizi Plateau	AT, SWB, BWBS	Northern Mountains & Plateaus - Southern Boreal Plateau
45 South Omineca Mountains	sub-boreal interior montane	large valley lakes	rolling & mountainous	low - mod.	Kaska Mountains - Omineca Mountains Interior Plateaus - Manson Plateau	AT, BWBS, SS, ESSF	Skeena & Omineca Mountains - Omineca Mountains
46 North Omineca Mountains	boreal montane	mountain lakes	rugged mountains	mod. - high	Kaska Mountains - Omineca Mountains	AT, SWB, BWBS	Northern Mountains & Plateaus - Cassiar Ranges
47 Northern Rocky Mountain Trench	north central interior; boreal	meandering river, large reservoir	flat & rolling	low	Northern Rocky Mtn. Trench	BWBS, SWB, SBS	Skeena and Omineca Mtns - Omineca Mountains Fraser Basin - Nechako Lowland Central Rocky Mountains - Hart Ranges Northern Rocky Mtns - Muskwa Ranges Northern Mountains & Plateaus - Kechika Mountains - Cassiar Ranges

REGIONAL LANDSCAPES	CLIMATE TYPE	MAJOR HYDROLOGICAL THEMES	PHYSIOGRAPHY			BIOGEOCLIMATIC ZONES (Ministry of Forests)	ECOREGIONS (Demarchi)
			General Character	Relief	Physiographic Grouping - Physio. Unit (Mathews)		Ecoregions - Ecosections
48 Central Rocky Mtns. & Foothills	sub-boreal interior montane	mountain lakes	hilly & mountainous	moderate	Rocky Mountains - [illegible] Ranges - Muskwa Ranges - North. RM Foothills	AT, BWBS, SS, ESSF	Central Rocky Mountains
49 Northern Rocky Mountains	boreal montane	glaciers, mountain lakes	mountainous	high	Rocky Mountains - Muskwa Ranges	AT, SWB, BWBS	Northern Rocky Mountains - Muskwa Ranges
50 Northern Foothills	boreal montane		hilly & mountainous	low - mod.	Rocky Mountains - North. RM Foothills	AT, SWB, BWBS	Northern Rocky Mountains - Muskwa Foothills
51 Peace Plateau	boreal	entrenched rivers, major river, wetlands	flat & rolling	low	Alberta Plateau - Sikanni-Beatton Plat. - Peace Lowland - Kiskatinaw Plateau	SWB, BWBS	Alberta Plateau - Sikanni-Beatton Plateau - Peace Lowland - Kiskatinaw Plateau
52 Fort Nelson Lowland	sub-arctic	meandering streams, wetlands, plateau lakes, major river	flat; some buttes	low	Great Slave Plain - Fort Nelson Lowland	SWB, BWBS	Fort Nelson Lowland Alberta Plateau - Sikanni-Beatton Plateau
53 Liard Uplands	sub-arctic	major river	rolling mountains	low - mod.	Franklin Mountains - Liard Ranges MacKenzie Mountains - Hyland Highland - Rabbit Plateau	AT, SWB, BWBS	Northern Rocky Mountains - Liard Upland - Muskwa Ranges
54 Liard Plain	sub-arctic/boreal	meandering rivers, major river	flat & rolling	low	MacKenzie Mountains - Hyland Highland - Rabbit Plateau Kaska Mountains - Liard Lowland	SWB, BWBS	Liard Basin
55 Cassiar Mountains	boreal montane	mountain lakes	hills & mountains	moderate	Kaska Mountains - Cassiar Mountains - Dease Plateau - Nesutlin Plateau	AT, SWB, BWBS	Northern Mountains & Plateaus - Cassiar Ranges - Tuya Range - Kechika Mountains

REGIONAL LANDSCAPES	CLIMATE TYPE	MAJOR HYDROLOGICAL THEMES	PHYSIOGRAPHY			BIOGEOCLIMATIC ZONES (Ministry of Forests)	ECOREGIONS (Demarchi)
			General Character	Relief	Physiographic Grouping - Physio. Unit (Mathews)		Ecoregions - Ecosections
56 Stikine-Yukon Plateaus	sub-arctic/boreal	large valley lakes, plateau lakes, wetlands	rolling & hilly; some mountains	low - mod.	Stikine Plateaus - Tanzilla Plateau - Taku Plateau	AT, SWB, BWBS	Northern Mountains & Plateaus - Stikine Plateau - Teslin Plateau - Tuya Range - Tahltan Highland
57 Tagish - Tahltan Highland	north central interior/northern mountain transition; sub-arctic and north coastal mix	braided streams, small lakes, glaciers	rugged highland, plateau/mountain transition	high	Coast Mountains - Boundary Ranges Teslin - Taku Plateau	SWB, AT, BWBS, SBS, ESSF	Yukon-Stikine Highland - Tagish Highland - Tahltan Highland
58 Boundary Ranges	Pacific coast and mountains/northern mountain transition; coastal/boreal montane mix	major rivers, icefields, mountain lakes	extremely mountainous	very high	Coast Mountains - Boundary Ranges	AT, CWH, ESSF, SBS, BWBS, SWB	Boundary Ranges
59 St. Elias Mountains	northern mountain transition/north central interior; coastal/sub-arctic montane mix	large braided rivers, icefields	extremely mountainous	mod. - very high	St. Elias Mountains - Alsek Ranges - Icefield Ranges - Fairweather Ranges	AT, SWB, CWH	Tatshenshini Basin Icefield Ranges Boundary Ranges - Alsek Ranges

Descriptions of the Landscapes

LANDSCAPE #1: GULF ISLANDS

Location: Southwest; Gulf Islands, southeast coast of Vancouver Island, between Vancouver Island and mainland, and the coastal zone of the Sunshine Coast.

General Description:

Canada's driest maritime region, having a mediterranean-type climate. A group of islands and the adjacent lands of Vancouver Island and the Sunshine Coast directly associated with Georgia Strait. Hilly with peaks to 1,000 metres, forests of Douglas fir, cedar, Garry oak and arbutus. Estuaries important to salmon and waterfowl. Blacktail deer, cougars, shorebirds, seabirds, raptors, seals and other marine mammals.

LANDSCAPE #2: GEORGIA LOWLANDS

Location: Southwest; flanking Georgia Strait area on both the Vancouver Island and mainland sides.

General Description:

A rolling and hilly lowland area of generally low relief in close proximity to the protected "inland" sea, Georgia Strait. Mild climate is drier than in adjacent mountain areas; transitional between Gulf Islands Landscape and adjacent mountain landscapes. Extensive shallow beaches, numerous streams with estuaries important for fish and wintering waterfowl. Forests of Douglas fir and hemlock. Blacktail deer, upland birds, raptors and seabirds.

LANDSCAPE #3: WEST VANCOUVER ISLAND MOUNTAINS

Location: Southwest. Primarily comprising the western and northern drainages of the Vancouver Island mountains except western lowland area.

General Description:

A low but moderately rugged mountain block. Its low to high elevation climates are strongly influenced by the Pacific with cool, rising air masses that generate high precipitation year round. Forests are dominated by western hemlock with sitka spruce and red cedar common. Alpine vegetation is limited. It has an extensive marine and fiord shoreline. Rivers are short and swiftly flowing.

LANDSCAPE #4: EAST VANCOUVER ISLAND MOUNTAINS

Location: Southwest. Primarily comprising the eastern drainages of the Vancouver Island mountains except eastern lowland area.

General Description:

A low but moderately rugged mountain block. Its low to high elevation climates are influenced by the Pacific but, as rainshadow area, it is the driest

mountain block of coastal B.C. Its summers are warmer than the Western Vancouver Island Mountains landscape. Forests are dominated by hemlock but Douglas fir is extensive. Alpine vegetation is limited. It has only a small area of marine shoreline. Rivers are short and swiftly flowing with salmon spawning limited by numerous waterfalls on lower the reaches of rivers.

LANDSCAPE #5: **WEST COAST PLAIN**

Location: Southwest; along the central and southwestern coast of Vancouver Island.

General Description:

A low-laying coastal plain directly exposed to the Pacific Ocean; terrain is an abrupt contrast with the adjacent mountains. Numerous islands, islets, inlets, bays, wide sandy beaches. Offshore, the gentle shelving produces extensive relatively shallow waters with shellfish, salmon, sea lions, seals, gray whales, bald eagles, abundant migratory birds and shorebirds. Western hemlock forests with sitka spruce and red cedar. Heavy winter rains.

LANDSCAPE #6: **NAHWITTI LOWLAND**

Location: Southwest; northern end of Vancouver Island.

General Description:

A low elevation part of the outer coast, with hilly relief and a very wet temperate climate. Rounded hills to flat, poorly-drained areas near sea. Meandering tea-coloured streams from cedar-sphagnum bogs. Extensive sandy beaches and rugged headlands. Cougars, wolves, deer, black bears, migratory and resident birds at estuaries, sea-run cutthroat trout in streams.

LANDSCAPE #7: **FRASER FLOOD PLAIN**

Location: Southwest corner of the mainland portion of the Province.

General Description:

This is a generally flat coastal area of very low elevation and a mild, moderately wet temperate climate. Dominated by the estuaries and alluvial plains of the Province's most significant river. Tidal influence far inland. Crucial habitat for migratory birds and wintering waterfowl. Important salmon spawning river system.

LANDSCAPE #8: **SKAGIT-LOWER MAINLAND MOUNTAINS**

Location: Southwest, near the coast, and surrounding the inland limits of the Fraser Flood Plain.

General Description:

A mountainous coastal area of moderately rugged terrain that is transitional between the Fraser Flood Plain and the more rugged coastal mountains to the

north and the drier interior mountain landscapes to the east. Mountains to 2,300 metres. Numerous waterfalls, streams, large lakes. Black bears, blacktail deer, salmon and trout, some mountain goats. Western and mountain hemlock forests at low elevations and alpine tundra in higher elevations.

LANDSCAPE #9: **SOUTHERN FIORDLAND**

Location: Southwest coast of mainland of Province; inland of Georgia Strait and Georgia Lowlands.

General Description:

Mountainous coastal and marine fiord area of moderate ruggedness with peaks to 2,000 metres, steep slopes with waterfalls cascading to sea. A mild moist climate. Distinguished from the Pacific Ranges to the east by being considerably less rugged, from the Skagit-Lower Mainland Mountains by the presence of saltwater fiords, and from the Midcoast Fiordland landscape by the relatively greater degree of protection from the full force of Pacific weather systems. Mammals and birds congregate near estuaries at heads of fiords during salmon migrations. Few remaining natural areas except at higher elevations.

LANDSCAPE #10: **PACIFIC RANGES**

Location: Southwestern part of mainland of Province; closely associated with the coast.

General Description:

The most prominent block of mountains in southwestern British Columbia; extreme relief, ruggedness, steep lower slopes, serrate and ice-capped peaks to 4,000 metres, among highest in province. Icefields and glaciers feed high-elevation lakes, rivers and waterfalls. Low elevation coastal western hemlock forests and estuaries of the adjacent fiord areas are critical areas for grizzly bear, black bear, and black tail deer.

LANDSCAPE #11: **MIDCOAST FIORDLAND**

Location: Southwestern coast of Province; immediately east of northern Vancouver Island.

General Description:

A coastal mountain landscape that is a complex of fiords, passages and islands of moderate relief and ruggedness compared to other coastal fiord landscapes. Steep slopes with waterfalls and summits of 2,000 metres. Has a wetter climate than adjacent areas to the south. Coastal western hemlock forests with alpine tundra at higher elevations. Blacktail deer, grizzly and black bears, mammals and birds in estuaries at fiord heads during salmon migrations. Marine life abundant in Queen Charlotte and Johnstone Straits.

LANDSCAPE #12: **NORTHERN FIORDLAND**

Location: Central latitudes of province, but northern part of coast.

General Description:

A coastal mountain landscape that is generally forested, of moderate relief and ruggedness. Featuring monolithic granite domes, a high number of bare granite faces and slopes above fiords, reaching from sea level to high elevations. Waterfalls and glaciers with a complex coastline of fiords, passages, and islands. Coastal western hemlock with sitka spruce confined to the coastal margins. Valleys with sitka deer, grizzly and black bears.

LANDSCAPE #13: **NORTH COAST LOWLAND**

Location: Northern mainland coast of the Province, which occupies a central latitudinal position in British Columbia.

General Description:

A coastal landscape of low elevation, flat to hilly terrain, very wet marine climate, and consisting of storm washed islands and associated passages.

LANDSCAPE #14: **QUEEN CHARLOTTE LOWLAND**

Location: Northeastern half of Graham Island, the northern main island of the Queen Charlotte Islands.

General Description:

A low elevation, generally flat offshore island environment with a very wet marine climate, and extensive bogs, marshes, and beaches.

LANDSCAPE #15: **QUEEN CHARLOTTE MOUNTAINS**

Location: Offshore of northern coast (middle latitudes) of Province; constitutes the majority of the Queen Charlotte Islands.

General Description:

An isolated offshore island environment that is rugged, of low to moderate relief, has high precipitation, is generally forested and has two distinctive coastlines, east and west, featuring a series of islands and islets.

LANDSCAPE #16: **KITIMAT RANGES**

Location: Central coastal British Columbia.

General Description:

Moderately rugged mountain area with a marine moderated climate and displaying massive exposed granite slopes and mountain faces at all elevations.

LANDSCAPE #17: **CASCADE RANGES**

Location: Southern central interior, adjacent to southern boundary of province.

General Description:

Rainshadow, temperate region of moderate to high relief and relatively gently sloped, well forested mountains.

LANDSCAPE #18: **CHILCOTIN MOUNTAINS**

Location: Southwest, between the southern coastal mountains and the southern interior plateaus.

General Description:

Rainshadow belt of rugged mountains of moderate to high relief, with wide dryland valleys between mountain blocks, and with extensive areas of alpine tundra and subalpine vegetation.

LANDSCAPE #19: **PAVILION RANGES**

Location: Southwestern central interior.

General Description:

A relatively small group of folded and faulted mountain ranges, largely consisting of sedimentary and related rocks, and occurring in the rainshadow of the coast mountains.

LANDSCAPE #20: **THOMPSON PLATEAU**

Location: South central interior.

General Description:

Rolling and hilly dryland plateau featuring extensive grasslands at the lower elevations, continuous forest cover at mid and higher elevations, and numerous small and medium sized lakes.

LANDSCAPE #21: **THOMPSON BASIN**

Location: South, central interior.

General Description:

A dryland interior basin of flat and hilly terrain, surrounded by higher elevation, dissected plateau country.

LANDSCAPE #22: **OKANAGAN BASIN**

Location: South, central interior.

General Description:

A wide, north-south oriented dryland valley of flat and hilly terrain that is situated between higher country of dissected relief.

LANDSCAPE #23: **OKANAGAN HIGHLAND**

Location: Southern, central interior.

General Description:

A transitional area, in terms of climate and terrain, between the dryland basin and plateau country to the west and the more mountainous country to the west; a moderately dry area of moderate elevations and a hilly to mountainous terrain.

LANDSCAPE #24: **SOUTH COLUMBIA RANGES**

Location: Southeastern interior, adjacent to the southern boundary of the Province.

General Description:

A hilly to mountainous area of the moist interior region, with subdued relief and ruggedness, contrasting with other parts of the Columbia Mountains, and with broad, gently sloping valleys.

LANDSCAPE #25: **CENTRAL COLUMBIA MOUNTAINS**

Location: Southeastern interior.

General Description:

A mountainous, moist interior landscape with a mixture of rounded, moderately rugged and very rugged summits and with relatively wide, gently sloping valley bottoms.

LANDSCAPE #26: **PURCELL MOUNTAINS**

Location: Southeastern interior.

General Description:

A moderately rugged, interior mountain area, physically similar to adjacent areas to the west, but with a rainshadow climate.

LANDSCAPE #27: **NORTH COLUMBIA MOUNTAINS**

Location: Southeastern to central eastern interior.

General Description:

Extremely rugged mountain belt with a moist interior climate and considerable icecaps and glaciers.

LANDSCAPE #28: **EAST KOOTENAY TRENCH**

Location: Southeastern corner of the Province.

General Description:

A distinctive, broad intra-montane dryland, interior valley of flat and rolling terrain.

LANDSCAPE #29: **SOUTHERN ROCKY MOUNTAIN TRENCH**

Location: Southeastern and central eastern sector of the Province.

General Description:

A distinctive, broad intra-montane valley with a moist interior climate and a flat to rolling terrain.

LANDSCAPE #30: **BORDER RANGES**

Location: Extreme southeast corner of Province.

General Description:

Southernmost section of the Rocky Mountains; a hilly and mountainous area of more subdued relief and gentler, wider valleys than its northward counterpart.

LANDSCAPE #31: **SOUTH CONTINENTAL RANGES**

Location: Southeast boundary of the Province.

General Description:

The southern component of the most rugged segment of the Rocky Mountains, the Continental Ranges; distinguished from the northern part by a dryer climate, different biogeoclimatic pattern, and lesser extent of icefields and glaciers.

LANDSCAPE #32: **NORTH CONTINENTAL RANGES**

Location: Southeast to central eastern periphery of the Province.

General Description:

The northern component of the most rugged segment of the Rocky Mountains, the Continental Ranges; distinguished from the southern part by a moister, cooler climate, different biogeoclimatic pattern, and greater extent of icefields and glaciers.

LANDSCAPE #33: **QUESNEL-SHUSWAP HIGHLANDS**

Location: South central interior, between central interior plateaus and Columbia Mountains.

General Description:

A moist interior area of hilly and gently mountainous terrain with rounded summits.

LANDSCAPE #34: **CARIBOO UPLANDS**

Location: Central interior.

General Description:

A gently rolling, sub-boreal interior plateau featuring a large number of small to medium sized shallow lakes.

LANDSCAPE #35: **CENTRAL CARIBOO BASIN**

Location: Central interior.

General Description:

A dryland interior plateau surface; the driest portion of the interior plateaus; a flat to rolling terrain dissected by major rivers and featuring a mix of open forest and extensive grasslands.

LANDSCAPE #36: **CHILCOTIN PLATEAU**

Location: Central interior.

General Description:

A mid-elevation, generally forested, flat to rolling dryland plateau that is relatively undissected.

LANDSCAPE #37: **FRASER BASIN**

Location: Central interior.

General Description:

A low relief, flat to rolling, generally forested, sub-boreal plateau.

LANDSCAPE #38: **NECHAKO PLATEAU**

Location: Central interior.

General Description:

A gently hilly, forested, sub-boreal plateau landscape with an abundance of lakes, many of which are large and elongated.

LANDSCAPE #39: **BABINE-STUART PLATEAU**

Location: Central interior.

General Description:

A rolling upland of low ridges, forested, sub-boreal landscape with an abundance of wetlands and lakes, many of which are very large and elongated. The landscape is generally cooler and more moist than the Nechako Plateau to the south. Deciduous vegetation is common.

LANDSCAPE #40: **BULKLEY-TAHTSA RANGES**

Location: Central interior; lee side of coast mountains.

General Description:

A landscape of rolling, gently sloped mountains of moderate elevation and relief, as a transition between plateau to the east and more rugged terrain to the west; an interior, sub-boreal rainshadow climate.

LANDSCAPE #41: **HAZELTON RANGES**

Location: Central latitude; adjacent to coastal mountains.

General Description:

A relatively rugged mountain area that, in terms of climate and biotic patterns/variety, is transitional between coastal influences and sub-boreal interior influences.

LANDSCAPE #42: **NASS BASIN**

Location: Central latitude; between coast mountains and interior mountains

General Description:

An intra-montane, densely forested, semi-coastal lowland area of rolling and hilly terrain.

LANDSCAPE #43: **SUB-BOREAL SKEENA MOUNTAINS**

Location: Central to northern latitudes; southwestern part of northern interior.

General Description:

A mountainous landscape of the northern interior, with a dominance of highly folded sedimentary rocks, and a system of northwesterly trending parallel valleys.

LANDSCAPE #44: **SPATSIZI UPLANDS**

Location: Northern interior.

General Description:

A boreal landscape of both folded sedimentary mountains and highly dissected plateau, with deep valleys, relatively gentle slopes, and extensive rolling alpine areas.

LANDSCAPE #45: **SOUTH OMINECA MOUNTAINS**

Location: Northern central interior.

General Description:

A transitional northern mountain area of moderate relief; mountains are not typically rugged in appearance and, toward the south, the landscape merges with a dissected plateau surface.

LANDSCAPE #46: **NORTH OMINECA MOUNTAINS**

Location: Northern interior.

General Description:

A rugged boreal mountain landscape; more diverse topography and more rugged than adjacent mountain areas.

LANDSCAPE #47: **NORTHERN ROCKY MOUNTAIN TRENCH**

Location: Northern central interior.

General Description:

A wide mid-elevation valley amid the northern mountains. The broader southern end of the trench is now largely occupied by the Williston Reservoir. It is differentiated from northern area by its sub-boreal spruce climax forest and the reservoir. The narrower north half exists in a natural condition with boreal white and black spruce the climax vegetation type. The major rivers are a dominant feature, with extensive floodplains and pronounced meander channels. Deciduous vegetation is extensive in these areas.

LANDSCAPE #48: **CENTRAL ROCKY MOUNTAINS AND FOOTHILLS**

Location: Northeastern central interior.

General Description:

The segment of the Rocky Mountains and Foothills that has the least pronounced relief and ruggedness; a sub-boreal area of relatively modest mountains and hills, arranged in distinct ridges, and separated by broad U-shaped valleys.

LANDSCAPE #49: **NORTHERN ROCKY MOUNTAINS**

Location: Northeast sector of Province; the northernmost component of the Rocky Mountains.

General Description:

The boreal, comparatively rugged northern landscape of the Rocky Mountains, with extensive alpine tundra and long, U-shaped valleys leading into and through the mountains.

LANDSCAPE #50: **NORTHERN FOOTHILLS**

Location: Northeast sector of the Province; between the northern end of the Rocky Mountains and the northern Great Plains.

General Description:

A boreal landscape of hills and serrate peaks and ridges organized in long north-south axes and separated by relatively wide U-shaped valleys; lower elevation and less relief than adjacent Rocky Mountains.

LANDSCAPE #51: **PEACE PLATEAU**

Location: Northeast sector of Province; east of northern end of Rocky Mountains.

General Description:

A boreal plateau landscape; part of the Great Plains of the central interior of North America; minimal relief, except where rivers have incised the plateau.

LANDSCAPE #52: **FORT NELSON LOWLAND**

Location: Northeastern corner of Province.

General Description:

An extensive and uniform boreal plain with considerable muskeg and wetland, and numerous small shallow lakes.

LANDSCAPE #53: **LIARD UPLANDS**

Location: Northeast sector of Province, on northern boundary.

General Description:

A boreal, well dissected plateau area of low to moderate relief, with rounded and flat-topped summits and forested gentle slopes and ridges.

LANDSCAPE #54: **LIARD PLAIN**

Location: Northern boundary of the Province.

General Description:

A flat and rolling northern plain of low relief and covered by boreal forest.

LANDSCAPE #55: **CASSIAR MOUNTAINS**

Location: Northern interior; this is the north half of the Cassiar-Omineca Mountain system.

General Description:

A moderately rugged, but varied series of boreal mountain ranges; distinctive for the mixture of broad, high and low elevation valleys, rugged and rounded ridge systems, boreal climate, and extensive blocks of contiguous alpine tundra.

LANDSCAPE #56: **STIKINE - YUKON PLATEAUS**

Location: Northwestern interior.

General Description:

A topographically diverse boreal landscape, consisting of a series of rolling plateaus and dissected uplands separated by wide valleys of low relief, in contrast to the adjacent mountainous landscapes to the south, east, and west.

LANDSCAPE #57: **TAGISH-TAHLTAN HIGHLAND**

Location: The northwestern corner of the Province.

General Description:

A rugged area transitional between the narrow, steep sided valleys and glacier/alpine dominated Boundary Ranges and the lower, rolling blocks of plateau and dissected upland of the Stikine-Yukon Plateau. A high variety of climates and vegetative patterns are displayed (Arctic, Pacific coast) where major valleys penetrate from the coast; alpine tundra and spruce-willow-birch are the prevalent vegetation. Stone's and Dall sheep, and caribou are abundant. Grizzly and black bear are abundant in the major drainages.

LANDSCAPE #58: **BOUNDARY RANGES**

Location: Northern west perimeter of the Province; interior half of coastal ranges (east facing) adjacent to Alaska.

General Description:

A belt of northern mountainous terrain that is rugged, contains a variety of boreal, coastal, and sub-boreal climates, has a very high relief and is capped by extensive icefields and glaciers.

LANDSCAPE #59: **ST. ELIAS MOUNTAINS**

Location: The northwestern corner of the Province.

General Description:

Extremely rugged, heavily glaciated mountain arc surrounding a complex of wide low relief valleys with plateau-like upland surfaces; a high variety of climates and vegetative patterns are displayed (Arctic, Pacific coast) in a relatively compact area. Contain a provincially unique set of wildlife values.

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Appendix: Delineating the Landscapes

Introduction

Landscapes are a combination of form, texture, colours, and patterns. Form is the first component perceived by most people. Any area can be readily distinguished as either flat, rolling, ruggedly mountainous, and so on. After form, a person is likely to perceive any obvious textures, colours, or patterns, such as the general type of vegetation, any specific terrain features, any pattern to the presence of water bodies, or any characteristic occurrence of wildlife.

Since most people discern landscapes in this manner, and because provincial parks are components of natural environments set aside for people to enjoy, it is important that a parallel method is used to identify Landscapes for the parks system. As these Landscapes are multi-disciplinary in character, location of their boundaries requires subjective judgement, as each discipline — geology, physiography, ecology, climate, etc. — tends to describe different sets of regions with differing boundaries.

General Method

Therefore, in distinguishing Landscapes for the parks system, the general method used involves the following three steps. The final two sections of this Appendix provide additional background information on this process.

(1) Adjacent regions of obviously different hydrologic and physiographic form were distinguished: for example, rugged mountains, rolling hills, coastal lowland. Both Holland's 1964 analysis of the physiography of British Columbia and the 1986 physiographic map prepared by Mathews (Geological Survey of Canada) were used to guide the location of both definite and arbitrary boundaries. Only those subdivisions based on readily observable distinctions were accepted.

(2) Within each of these initial physiographic units, the general and relative patterns of ecosystems, terrain features, and hydrologic features were examined. For this, three references were used: 1:250,000 topographic mapping; the Ministry of Forests' 1988 map of biogeoclimatic zones; and Demarchi's (Ministry of Environment) "Ecoregions" map. Where significant differences were identified within any given Landscape, the demarcations of one of the latter two references was used to define the appropriate section of the Landscape boundary.

(3) It was recognized that the actual appearance of Landscapes may vary geographically from the various cartographic interpretations used as primary references. Therefore, it was considered appropriate to review the proposed Landscape boundaries, derived through steps 1 and 2 above, on the basis of first hand observation of the landscapes. From this review, a number of "fine tuning" adjustments were made to the Landscape boundaries in order to better reflect observable conditions in the field.

In this exercise, it must be remembered that many subjective judgements are required in the determination of Landscape boundaries. Ultimately, the parks system must give greatest value to the characteristics of any particular Landscape rather than the boundaries of convenience that display it on a map. Most Landscapes are surrounded by broad zones of transition to adjacent Landscapes.

Integration of "Marine Environments"

In the 1982 edition of the "Natural Regions..." technical document, the marine subdivisions of the natural regions were identified as "marine environments". These were defined as:

> "... broad divisions of the saltwater environment of coastal British Columbia. Among the three coastal natural regions, there are seven marine environments. These are distinguished on the basis of physical and chemical oceanography, climate, geomorphology (of the ocean floor), and biology. Each marine environment consists of an intertidal zone, a surface zone, a sub-surface aquatic zone, and an ocean floor zone."

When this edition was prepared there were four reasons for separated marine environments from terrestrial environments. First, there was (and is) comparatively little knowledge about the geographic distribution of marine environment characteristics, contrasted with the terrestrial environment. Combining the two, it was felt, would tend to obscure and compound this problem.

Secondly, the geographic frameworks for analyzing landscapes were (and are) primarily based on terrestrial perspectives: biogeoclimatic zones, physiographic subdivisions (from S. Holland), and biotic zones. The third reason was that there existed a contemporary program/policy thrust towards underwater parks. It was felt that the distinction of marine environments would give added emphasis in this direction. Finally, the marine environment is regulated by legislation and regulations well beyond the authority of the Park Act, and therefore this statute is more limited in its applicability to marine areas than land areas.

After several years of application of the concepts identified in the 1982 document, it has been concluded the concept of marine environments complicates rather than simplifies the ability of the parks system to meet its goal of representing the diversity of natural environments. There are three considerations in this regard:

(a) It is considered preferable to seek to represent Landscapes, whereas previously natural regions, each comprised of one or more landscapes, were the primary object of representation. The marine environments were subdivisions of natural regions, not Landscapes.

(b) The provincial parks system is strongly oriented to the public's need for natural settings to appreciate and to enjoy in recreational activities. Therefore, marine areas of interest are invariably closely associated with adjacent land areas. Offshore marine areas are of lesser recreational or appreciation interest to the general public, certainly from a traditional parks-oriented perspective.

(c) The system described in the 1982 document creates a difficulty in appreciating the relationship between a coastal landscape and the adjacent marine environment. Where does one stop and the other begin when clearly there is a strong physical and biological interface? For example, discerning between the "fiordland" Landscape and the "coastal fiords marine environment" is arbitrary and contrary to the concept of Landscapes as integral wholes of the range of environmental characteristics.

It remains important that the parks system should seek to encompass representation of marine environmental characteristics. This can be best achieved by considering these characteristics as essential components of coastal landscapes. This helps clarify the description of these Landscapes, because they do not artificially stop at the water's edge.

The one problem that results from this proposal is the treatment distinctly offshore marine characteristics (i.e. those that are considerably removed from any terrestrial environment or foreshore area). There must, in these instances, be arbitrary decisions as to whether such biological and physical characteristics associated with open ocean have any place within the concept of and representation of Landscapes in the provincial parks system. It is a reasonable argument that part visitors, being largely land-based (even if they are boating or diving), are not inclined to seek recreational or appreciative experiences in these offshore, oceanic areas. These are areas of industrial interest (commercial fishing, shipping) but of marginal direct interest to the general public. Furthermore, the provincial Park Act has significant jurisdictional limitations in such areas.

Therefore, it has been concluded that at this time offshore marine environments should be excluded from the Landscapes system and from consideration within the provincial parks system. This current procedure is not intended to preclude the future possibility of defining completely marine environments, separate from terrestrial Landscapes, where this is considered appropriate. For this edition then, the issue of marine environments has been resolved by examining each coastal Landscape and describing its general association with marine areas and characteristics.

Classifications Associated with Landscapes

Biogeoclimatic Zones

In 1975 the Ministry of Forests adopted the biogeoclimatic system to serve as a framework for ecosystem classification. In this system, climate is considered to be the main environmental influence on ecosystems. In 1988, the Ministry produced an updated and revised provincial mapping of these biogeoclimatic zones. In addition, the Ministry has also been producing more detailed mapping of biogeoclimatic subzones for each of its forest regions.

Climatic factors vary on the provincial scale with elevation, marine influence, and latitude. British Columbia's diverse, often rugged topography, contrasts between the influences of the Pacific Ocean, the Arctic, and the continental landmass, and the long north-south (latitudinal) axis mean that there is a considerable array of climates. Often

there is significant climatic variation within very short distances. Based upon this variety, fourteen ecological zones have been identified. These biogeoclimatic zones and their associated subzones tend to be named for the dominant climax tree species, although many different specific, non-climax, or micro-occurrence ecosystems may be found within any given biogeoclimatic zone.

This system is not well suited to the selection of regionally representative parks in British Columbia because, from the perspective of the general public, each zone occurs in a diverse geographic context, often in differing associations with other biogeoclimatic zones and physical landscape characteristics. Representative sites for biogeoclimatic zones may have little observable relationship to physical, hydrologic, or wildlife patterns in the landscape. Moreover, the distribution of climax tree species may be more theoretical than visible on the ground, particularly by the general public. The general public tends to see specific types of vegetation communities, which may or may not be indicative of the climax forest conditions. This system is designed for foresters, botanists, and resource managers who are focused upon vegetation.

Across the province, there are patterns of associated biogeoclimatic zones. These patterns of associated zones relate to topography and climate. The occurrence of these patterns is an important consideration in the definition of Landscapes for the provincial parks system.

Ecoregions

The Ministry of Environment has produced a provincial Ecoregion system of terrestrial and marine ecological zones which integrate provincial classifications of ocean currents, macroclimate, physiographic mapping, biogeoclimatic subzones, and wildlife. The system includes a hierarchy of "Ecodomains," "Ecodivisions," Ecoprovinces," "Ecoregions" and "Ecosections." The Ecoregion system is useful for a broad range of natural resource management activities in the province.

The Ecosection level has been incorporated, along with the other considerations discussed in this report, into the park Landscapes. Ecosections are used for two major reasons. Firstly, they are used to modify the Landscape boundaries to make them more ecologially accurate. Secondly, they are used to assess current representation and to determine further representation of vegetation and wildlife ecosystems in the park system. The Ecosections have made a major contribution, but some Landscapes differ from Ecosections where required for park purposes.

Physiographic Mapping

For many years the standard reference for physiographic divisions of this province has been Stewart Holland's *Landforms of British Columbia: A Physiographic Outline*. This analysis is hierarchical and thorough. Holland first divides the province into four major physiographic divisions, each aligned northwest-southeast and all parallel to one another from west to east. These divisions are then subdivided into units of relatively contiguous form: blocks of mountains, plateaus, etc. Next, these units are further subdivided into individual mountain ranges, plateaus, and so on. This analysis is conveyed in both map and text form, with the latter constituting a significant reference volume of detailed geologic distinctions.

The 1982 edition of *Natural Regions and Regional Landscapes for the B.C. Parks System* was based on Holland's physiographic analysis. It provided a clear and comprehensive set of boundaries that should be readily recognizable by the general public.

In 1986, the Geological Survey of Canada published an updated analysis of the *Canadian Cordillera*, as compiled by W.H. Mathews. This recent physiographic mapping has been accomplished with reliance on both older information (i.e. available to Holland) and more recent information (eg. satellite imagery). Notably this analysis is non-hierarchical. Mathews has mapped:

> "regions of homogeneous topographic character which are more or less distinct from adjacent areas and have different physiographic expression." (Mathews, 1986).

Also, Mathews has devised boundaries between regions based on a set of clear and consistent criteria that are logical to the average observer. Unlike Holland, Mathews does not rely heavily on geological information (i.e. rock types or ages) to set boundaries.

The consequence is that Mathews' analysis, while yielding many units that are quite similar to Holland's, has produced many boundaries that differ considerably from those of Holland. In terms of defining Landscapes for the parks system, the more recent system should be preferred. While Holland's work will remain an important reference, Mathews' analysis appears to be based on more up-to-date information and provides boundaries that are more likely to be meaningful to the general public.